THE SUBCULTURE OF AMATEUR RADIO

A Directed Study Paper

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THE SUBCULTURE OF AMATEUR RADIO

Saturday June 27, 2009 was the beginning of the weekend of our annual radio Field Day exercise. In the morning I drove to the Needham Memorial Park gazebo and arrived at 8AM. Soon other members of the Wellesley Amateur Radio Society radio club arrived and we started unloading the radios, cables, masts and antennas from our cars. In the gazebo, the women in the group set up tables and placed the radio gear on a couple of the tables while four of the men hammered stakes in the ground for the anchor lines that would hold two masts up. We eventually raised the two masts to hold the main wire antenna. Next we set up a large solar panel that powered the radios while another club member placed signs on the corner so that the public knew we were there.

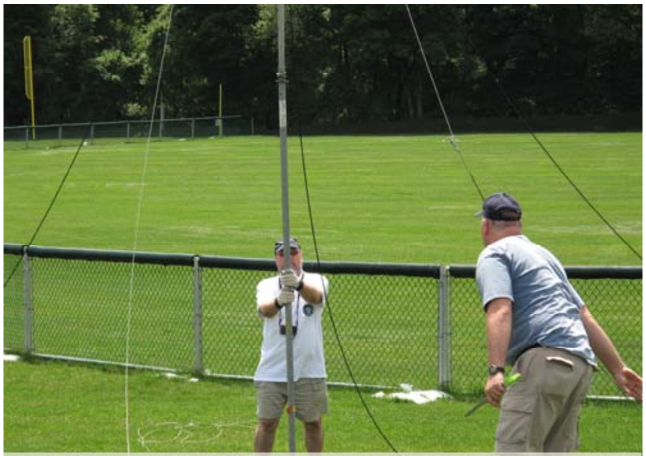


Figure 1 Raising the Antenna at Field Day

In the Gazebo people sat in folding chairs and chatting while others grabbed sodas from the cooler and snacks of chips and cookies. There was a sign-in sheet where all the club members as well as visitors could sign in. Also there were flyers about amateur radio and copies of our club newsletter to be given to anyone interested. After connecting the tangle of cables to the radios, we were ready. Soon the radio speaker crackled with people calling “CQ Field Day”. One of the members in the club spun the radio's tuning knob to find in a

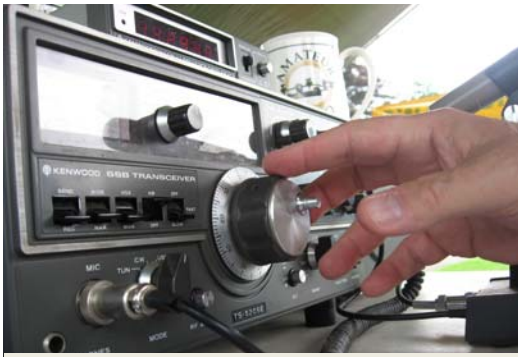


Figure 2 Listening For Calls

cacophony of Morse code signals. Using the club radio station call sign of W1TKZ, we operated from noon Saturday until noon Sunday talking to as many radio "hams" as possible.

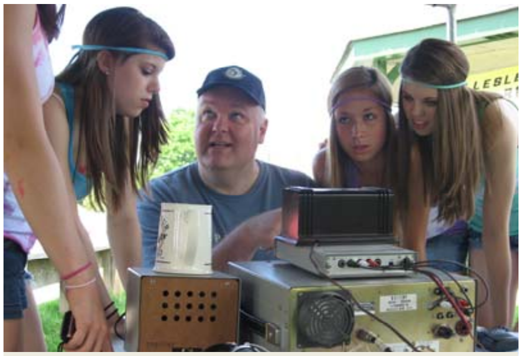


Figure 3 Explaining Amateur Radio

While one of the gang operated a "vintage station" from 1976, a group of high school girls who were on a modern style treasure hunt stopped by and asked questions about what we were doing. A fine opportunity to promote the hobby to newcomers, we explained our emergency response exercise, contest, and social event rolled into one. One girl then pulled out a list from their treasure hunt and found an item that required they dance with a stranger; she asked one of us to volunteer, so I danced as best as I could while another girl snapped photos as evidence of the achievement of their treasure hunt goal. After answering further questions from the girls, they eventually moved on to find other items on their treasure hunt list. Later in the evening one of our radio club members cooked a tasty meal of fresh salad, BBQ ribs on the grill with two homemade sauces and baked potatoes. After dessert I operated the radio late at night using Morse code, talked with about twenty-five other amateur radio stations and filled out a page in the radio log. The next day we reviewed the log and were happy at not only the number of other radio stations we talked to, but the distances we reached. At noon Sunday when the event was over, we dismantled the setup and packed the gear up until next year. This annual Field Day event is a national emergency preparation exercise and a fun contest in one. Most amateur radio clubs and many individual hams in the U.S. participate in this event each year to practice their emergency response and radio operating skills.

What is amateur radio? Why do people enter the hobby? How do the individuals in this technical subculture interact? This study seeks to examine the subculture and the social world of amateur radio enthusiasts in America. For this work I will explain what the Amateur radio service is, and then I'll briefly provide some history of the development of amateur radio and explore the demographics of the group. I will explain the rituals, artifacts and norms of the subculture. Finally I'll explore the changing directions of this social medium and what I have learned.

This paper came together from interviews of amateur radio hobbyists from the eastern Massachusetts area. I interviewed a few folks at a ham radio club flea market Marlboro held in February of 2010. I also interviewed radio operators on the telephone and visited a couple of amateurs in their homes. I talked with George Mouridian in his home in 2003-about a year before he passed away. He gave me a unique perspective on the early days of the hobby as well as early homemade radio construction. I interviewed Arline Berry at her home in 2006, as well as recently on the phone for this paper; she grew up with the hobby in her family and gave me an early vision of amateur radio as well as her experience in promoting women in the hobby. Her father was a charter member of the ARRL (the lobbying organization for radio amateurs in America) in the 1930s. Barbara Holdridge shared with me on the telephone her ideas about ham radio and gender bias. I chatted on the phone with long time friend Roger Gregorio, now living in to North Carolina who shared with me his early radio experiences and discussed the loss of many traditional radio activities. At the Marlboro flea, I spoke with Larry Coyle who illustrated his technical wonder and zeal of the radio art, as well as Jerry Reine, an amateur enjoys vintage radio and as it turns out actually attended the same high school in New Orleans as I did. At the flea, I spoke with Tim Ikeda, the event organizer and president of the Algonquin Amateur Radio Club who shared with me his vision of a dynamic future for the hobby. Finally I explored the future direction of the hobby with the editor of CQ magazine Rich Moseson wrote about in the pages of his periodical. Rich always has a unique viewpoint and provides thought provoking ideas.

As a group, I explored their early interest in the hobby, their views of the norms and rituals within the group and their thoughts of an evolving radio pastime. I asked questions about certain subjects and let the respondents head in the directions they wanted to speak about. To fill in some of the background information and history, I then gathered sources from books, magazines, the Internet and finally added my personal experiences as an active member of the fraternity.

Definition

From the Federal Communications Commission website

> The amateur and amateur-satellite services are for qualified persons of any age who are interested in radio technique solely with a personal aim and without pecuniary interest. These services present an opportunity for self-training, intercommunication, and technical investigations (http://wireless.fcc.gov/services/index.htm?job=service_home&id=amateur).

The term service is meant to show a give-and-take agreement between the government and the radio amateur that provides service in response for the privilege of being licensed. These amateur Radio operators are most often called “hams”, a term born from the telegraph industry when the telegraph operators often became angry at the poor operation of the amateurs who would often interfere with the commercial operations. According to Moreau (2009), the amateurs proudly adopted the word “ham” as shorthand for amateur. The hobby started in the beginning of the 19th century and has evolved with–and often pioneered-new technology.

History

Radio began in the 1800s when Heinrich Hertz discovered electromagnetic waves. Soon it was observed that these electrical waves could be received from a short distance away. Then the competition to lengthen the distance began. To create an effective radio communications network for ships crossing the Atlantic, Guglielmo Marconi developed large antennas and transmitters. Marconi was the first to span the Atlantic Ocean with his radio signals (Weightman 2003: 100). At the turn of the century, Lee Deforest invented the vacuum tube. This created great advancement in radio technology, as receivers could now be very sensitive and a new and more effective type of transmitter could be designed with the radio tube. Hobbyist “amateurs” began to experiment with the same gear and methods that Marconi and Deforest used. They often exceeded the efforts of the professionals and were soon given their own portion of the radio spectrum by the government.

When World War I broke out the hams were ordered by the government to get off the air; they joined the war effort assisting the development of new radio techniques for the war. After WW1 there was a boom in ham radio (DeSoto, 1936: 138). In 1941 at the beginning of World War II hobby radio operations were again shut down. Hams again entered the service and provided radio expertise through the Signal Corps. After the war there was high growth in the hobby. Servicemen came home, started careers and families. They also had renewed leisure time. Commercial gear began to be sold and greater efficiencies in communication could be had with less effort. Ham radio grew dramatically (Haring, 2006: 57).

Kits became popular and solid-state electronics permeated the hobby beginning in the late 1950s. Radios became smaller and more efficient. In the 1970s, mobile radio was popular and in the 1980s digital modes began to dominate. Today, analog and digital radio technology has merged with the computer and the Internet to allow worldwide communications via local radio and through Internet links.

The one person who influenced the social structure of amateur radio the most was Hiram Maxim. The son of the inventor of the Maxim machine gun and an inventor himself, Hiram extended the organization of his local radio club to a national level and thus co-founded the American Radio Relay League in Hartford, Connecticut in 1914. His idea was to increase the effectiveness of amateur radio stations by having an organized radio relay system (DeSoto 1936: 38). Maxim gave direction and purpose to the un-organized experimenters. The ARRL soon became the national association for amateur radio in America and thrives today.

Figure 4 Hiram Maxim

Demographics

According to FCC amateur radio statistics, there were 683,583 licensed amateur radio operators in the United States as of January 2010. California has the highest ham population of 90,717 radio amateurs while Massachusetts has a population of 12,750 (Speroni, 2010). According to Keane, there was a surge of 30,144 new amateur radio licensees last year (2010: 71). There is no official ethnic, race or economic data, as the FCC does not register such information, but most hams are Caucasian middle class men over 60 years old. According to an online article “A Study of Amateur Radio Gender Demographics” women comprise between 5% and 13% of the ham population (Harker, 2005).

Author Kristen Haring in her book *Ham Radio’s Technical Culture* states, “Through the combined strength of countless tiny gestures, hobbyists marked two-way radio as unquestionably manly” (Haring, 2006: 48). The author also states that women are discouraged from becoming full members of the fraternity and explains that the combined efforts of a few radio clubs in the 1940s to 1960s proved that segregation was commonplace. While she uses a couple of references that are decades old to make her point, these statements were not confirmed in this study as the people I interviewed have not experienced gender bias in ham radio. While women are a minority and the hobby has a strong masculine component, the women radio operators I interviewed explained they retain their own identities and have not been constrained by gender discrimination.

In a recent telephone interview, Barbara Holdridge told me that she has never experienced gender bias in her ham hobby either in the U.S. or in her travels abroad.

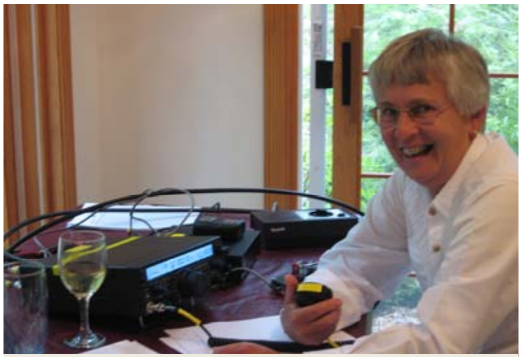


Figure 5 Barbara Holdridge

However, she has experienced intimidation as a member of the Power Squadrons (a boating safety club). Here the membership did not invite her to meetings and did not take her seriously. The speakers in the club would actually stop and stare at her if she would look over their shoulders or ask questions during technical talks. Barbara figured they were wondering, “Why would a woman be interested in an engine?” Barbara obtained her ham license in 1990 in order to have a backup communication system while she was boating. Today she also uses radio to grow her social network as well as for safety while driving in the car (telephone interview with Barbara, February 21, 2010).

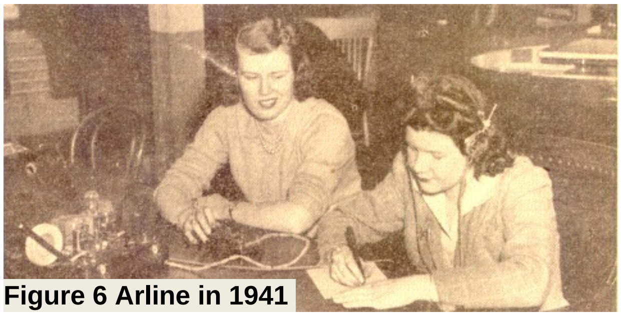


Figure 6 Arline in 1941

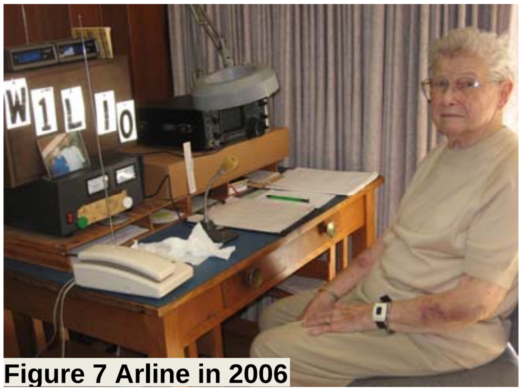


Figure 7 Arline in 2006

Arline Berry told me she was the first woman ham radio operator and club Secretary in the Waltham Amateur Radio Club, becoming a member in 1940. She brought in five other women into the club and helped them obtain amateur radio licenses. Later Arline was a key member of Women Radio Operators of New England (WRONE), a group that promotes female enjoyment and advancement within the hobby. Arline has never experienced gender bias in her long hobby career and remembers being with people only interested in the fun of ham radio (telephone Interview on Feb 21, 2010). Sadly, Arline passed away in April of this year.

Author Kristen Haring stated that the hobby can be seen as homophobic. Here, the fact that men talk with other men while excluding the rest of the family can raise the eyebrow of their families and neighbors. As a corollary, this can be said about other pastimes such as when auto hobbyists talk with each other about other male-based hobbies such as restoring automobiles. The author continues “But as two-way radio lost hi-tech status, hams needed to cultivate a masculine image for the hobby” (Haring, 2006: 37). The radio component and equipment manufacturers as well as the magazine publishers always advertised to the major demographic of the hobby-and that is male. Being a technical pastime men are attracted to the hobby more than women. However, in my studies, I have found no male hobbyist who is concerned about his masculine image; all are just enjoying the hobby.

According to Dave Horsfall (2010), the ham community not only has professional engineers and technicians, but also consists of garbage collectors, doctors, lawyers, actors (Garry Shandling), journalists (Hugh Downs), astronauts (Owen Garriott, Jeana Yaeger and others), Grammy award winning musicians (Joe Walsh of The Eagles and Ronnie Milsap), politicians (George Pataki) and Nobel Prize winners (Joe Taylor). Even Donnie Osmond was a ham once! The diverse pool of hobbyists has a common interest in the hobby.

The Radio Subculture

Common traits among amateur radio operators are the ownership of radio equipment and unique technical knowledge that the average person would not have. All hams have to pass an FCC exam to gain access to the radio spectrum that the amateur service uses. Many hams know and use the Morse code in the hobby, but this requirement has almost been eliminated.

Many amateurs enjoy the hobby due to the “magic” of radio and its potential unpredictability or chance. At the Marlboro flea market, I learned how Larry Coyle entered the hobby because of his scientific interest as well as his enjoyment of the variable nature of high frequency (HF) shortwave radio propagation. Larry [explained]() that sometimes the radio signals travel as desired and sometimes they do not, and he feels hams are tuned into one of the fundamental forces of the universe by sending electromagnetic signals up into the air. If we are lucky, the signals get reflected by the ionosphere back down to the earth maybe two thousand miles away. At the other end somebody is listening to the same thing. Larry also feels that people communicating on the Internet must rely on an infrastructure and says that you can’t communicate if a cell tower or the Internet is down. With ham radio if you have a transmitter, antenna, and battery you can communicate without any infrastructure (personal interview at Marlboro flea, February 13, 2010).

Figure 8 Larry in his Radio “Shack”

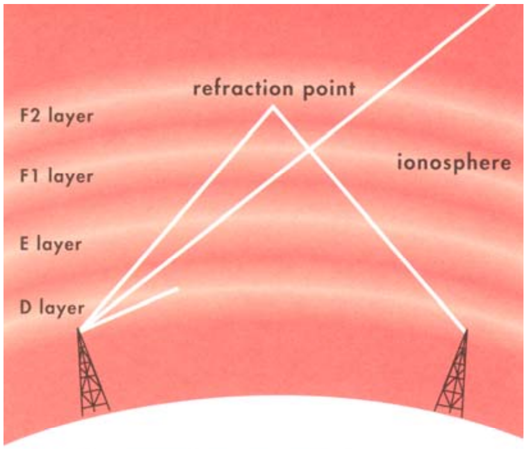


Figure 9 Radio Propagation Paths

On a recent phone call Roger Gregorio told me how he got started in the hobby. As a youngster he used to listen on his family console radio to hams talking on the air. When he was 20 years old, Roger got involved with ham radio in the beginning of 1959 through a neighbor who lived across the street. One day he stopped by his neighbor's house and watched him talk with people across the country on his radio set. Roger thought this was interesting and asked how to become a ham. The neighbor said it was easy, but once he mentioned to Roger that he had to learn the Morse code, Roger thought "uh-oh, we're in trouble here!" but soon found that the code was not too hard to learn. Interestingly, Roger's brother became a ham while stationed in Germany with the Air Force; he did not tell Roger. At the same time, his brother did not know Roger had become a ham! A friendly hobby competition has continued for many decades (Telephone interview, February 21, 2010).

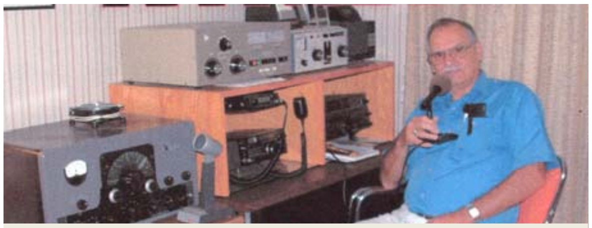


Figure 10 Roger Talking on His Radio

At the Marlboro flea market, Jerry Reine told me he joined the fraternity in the 1960s through a local ham club. He enjoys learning about geography as he talks to people from around the world on the radio. Today he also enjoys using vintage gear. Jerry likes the radio medium, and feels email is too easy and impersonal. I asked him whether he thought hams were different; but Jerry feels ham radio is a makeup of society at large (Interview with Jerry Reine, Marlboro Flea, 02/2010).

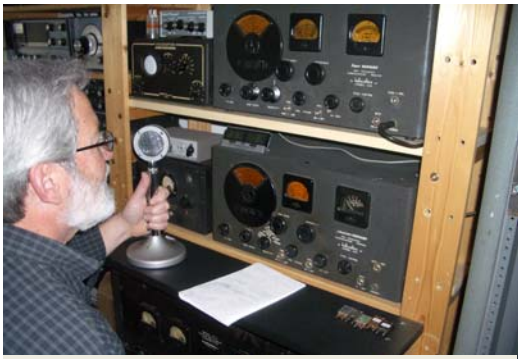


Figure 11 Jerry with Vintage Radios

My beginnings in the hobby started around 1972, where I bought a used Hallicrafters receiver in my grade school yard sale. I soon discovered a place on the radio dial where people were talking to each other, but I did not totally understand their jargon. It was fun to attempt to decipher this ham-speak as well as hear where these folks were from.

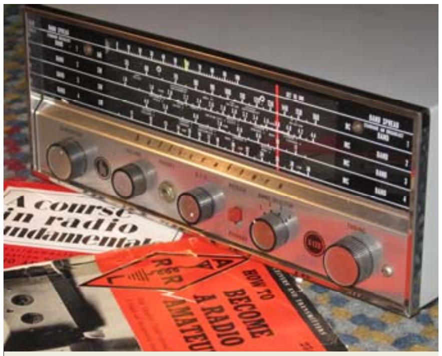


Figure 12 a First Receiver

As a pastime, members get satisfaction by building radio stations, "rag chewing" (talking on the radio) and achieving greater hobby related goals. Young kids got involved with radio to talk to friends in the neighborhood. Those with a competitive spirit would join radio contests where the goal is to talk to as many people in a geographic area as possible. Some members can be shy but can safely communicate via radio in the protection of their home. Roger Gregorio likes to build radio kits as well as the camaraderie of other hams and flea markets. Roger calls ham radio "The Great Equalizer", as social class distinction tends to be eliminated when one is on the radio; he could be the janitor of a company and have a good conversation with the president of the company as if they were buddies (telephone interview with Roger Gregorio, February 21, 2010).

Larry Coyle enjoys the novelty of being able to communicate without infrastructure and the social networks that are created through radio "contacts". Others like experimenting or testing their radio's effectiveness by talking to distant lands. Larry's radio interest propelled him into an electrical engineering degree, a career of electronic system design, and the enjoyment of math, engineering, physics and science in general. (Interview with Larry Coyle, February 13, 2010).

The amateur radio subculture separates itself from the public by the incorporation of federal licensing. Each ham is required to pass a written FCC exam and in some cases test for the proficiency of Morse code in order to obtain a station license. This license allows them to transmit on limited frequency bands organized and reserved for the amateur radio service. There are incentive based tests for different levels of proficiency (the lowest is called Technician class, while the highest level is called Extra class). Each level provides the ability to operate with increasing amounts of radio bandwidth and operating modes, while each member must heed the regulations of their license class. Once the initial test is passed, the person is assigned a call sign to represent the station (i.e. WA5WJZ) and the new ham can use a radio to talk to other hams. In time, these people are often referred to not by name, but by call sign. An operator’s license class forms the basis of social stratification within the group. Technician class operators are tolerated and are known to be beginners, while Extra class operators are known to be experts and are often looked up to. This testing system filters out those with a passing interest in the hobby and homogenizes the member’s within it while the call sign forms a new identification for the member. In the 1970s the FCC transferred the testing process to certain amateur radio operators called “volunteer examiners”. Today the technical knowledge requirements to pass the FCC exams have been relaxed to increase the membership.

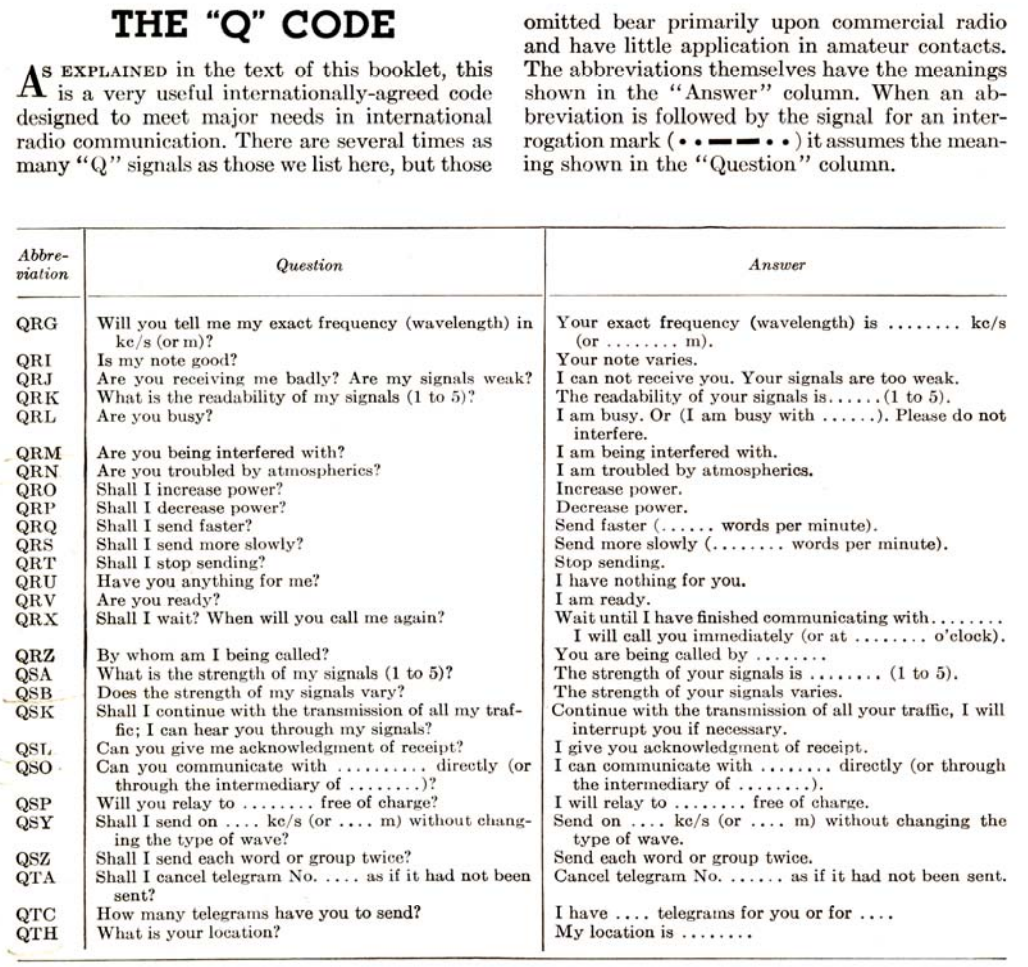
I remember when I passed my Morse code exam. After high school, I would visit friend Bob Dunn at his apartment as he was patiently teaching me the Morse code and electronics theory. Bob would teach me a few letters at a time, and then send full words for me to write down on paper. One day Bob told me to start writing. As he tapped out letters and words on his telegraph key, I thought it was just another practice, and I tried my best to write it all down. After a while of my scribbling words from the "beep-dit-beep-beep's", Bob then told me I passed the code test! I later passed the written exam and was very proud! Bob and I are good friends to this day.

Some people have a natural aptitude for Morse code, while others have great difficulty learning the basics. Used in the early telegraph circuits and known for its efficiency, Morse code and the use of special shorthand were developed to increase the efficiency while taking on the radio during noisy radio conditions. George Mouridian recalls:

> I was a telegraph operator when I was in grammar school if that means anything. Railway agent and telegraph operator when the regular guys were on vacation in the summertime…one in Corderville and one in Southville (Interview with George Mouridian, winter 2004).

From these beginnings around 1927, George used his Morse code knowledge to help obtain his amateur radio license. Morse code operators value their special expertise and often separate themselves from those who use only voice communication. They often feel they are better that those that use voice communications. Amateurs who can send and receive Morse code at faster rates are deemed more proficient than those who use the minimum speed of 5 words per minute. Morse code is often called "CW" in the fraternity as the transmission method is by interrupted Continuous carrier Wave.

The radio subculture uses a unique language to not only assist communications, but to filter out those who are not in the fraternity. Code letters, words and phrases have been adopted over the years to increase communication efficiency through the often-noisy shortwave radio medium. The “Q code” system of shorthand was created by telegraph operator Walter B. Philips in 1879 and adopted at the beginning of the amateur radio hobby for the most efficient communication at the time (Haring 2006: 26). A phrase such as “CQ” is used for "calling any ham radio operator”. The term “QSO” is used to depict a radio conversation. This system is unique to the hobby and also serves to identify one who is “in the fraternity” from one who is not. It is often easy to tell newcomers by their difficulty in using these codes; some use these codes in both radio and personal communication with another ham. Terms such as “FB OM” (Fine Business Old Man), “Hi Hi” (laughing) and “SK” (signing off) are also shorthand that was also devised for Morse code efficiency. In conversation, a seasoned ham will often replace a friend’s name with his radio call and use radio shorthand when talking. For example, “I had an eyeball QSO with WA3VJB yesterday. He said his XYL and harmonic were under the weather and his uncle went QRT”. Decoded, this means "I talked in person with Paul Courson yesterday. His wife and child were sick, and his uncle passed away.” During difficult radio conditions when static noise is high and voice is used, words may need to be repeated. The use of phonetics also helps to get the understanding of letters and words through. The letters ABC would be spoken as “Alpha Bravo Charlie”, a system also used by aviators.



THE "Q" CODE

As explained in the text of this booklet, this is a very useful internationally-agreed code designed to meet major needs in international radio communication. There are several times as many "Q" signals as those we list here, but those omitted bear primarily upon commercial radio and have little application in amateur contacts. The abbreviations themselves have the meanings shown in the "Answer" column. When an abbreviation is followed by the signal for an interrogation mark (• • ▬ ▬ • •) it assumes the meaning shown in the "Question" column.

Abbreviation	*Question*	*Answer*
QRG	Will you tell me my exact frequency (wavelength) in kc/s (or m)?	Your exact frequency (wavelength) is .... kc/s (or .... m).
QRI	Is my note good?	Your note varies.
QRJ	Are you receiving me badly? Are my signals weak?	I can not receive you. Your signals are too weak.
QRK	What is the readability of my signals (1 to 5)?	The readability of your signals is......(1 to 5).
QRL	Are you busy?	I am busy. Or (I am busy with ......). Please do not interfere.
QRM	Are you being interfered with?	I am being interfered with.
QRN	Are you troubled by atmospherics?	I am troubled by atmospherics.
QRO	Shall I increase power?	Increase power.
QRP	Shall I decrease power?	Decrease power.
QRQ	Shall I send faster?	Send faster (...... words per minute).
QRS	Shall I send more slowly?	Send more slowly (........ words per minute).
QRT	Shall I stop sending?	Stop sending.
QRU	Have you anything for me?	I have nothing for you.
QRV	Are you ready?	I am ready.
QRX	Shall I wait? When will you call me again?	Wait until I have finished communicating with........ I will call you immediately (or at .... o'clock).
QRZ	By whom am I being called?	You are being called by ....
QSA	What is the strength of my signals (1 to 5)?	The strength of your signals is .... (1 to 5).
QSB	Does the strength of my signals vary?	The strength of your signals varies.
QSK	Shall I continue with the transmission of all my traffic; I can hear you through my signals?	Continue with the transmission of all your traffic, I will interrupt you if necessary.
QSL	Can you give me acknowledgment of receipt?	I give you acknowledgment of receipt.
QSO	Can you communicate with .... directly (or through the intermediary of ....)?	I can communicate with .... directly (or through the intermediary of ....).
QSP	Will you relay to .... free of charge?	I will relay to .... free of charge.
QSY	Shall I send on .... kc/s (or .... m) without changing the type of wave?	Send on .... kc/s (or .... m) without changing the type of wave.
QSZ	Shall I send each word or group twice?	Send each word or group twice.
QTA	Shall I cancel telegram No. .... as if it had not been sent?	Cancel telegram No. ...... as if it had not been sent.
QTC	How many telegrams have you to send?	I have .... telegrams for you or for ....
QTH	What is your location?	My location is ....

Figure 13 the Q-Code from the Book "How to Become a Radio Amateur"

Every amateur radio operator is required to know basic electronics theory and the FCC amateur rules in order to pass the FCC exam. This knowledge begins with simple radio physics formulae and how they explain radio theory. From there, they learn how a radio works as well as radio signal propagation. There are books that teach electronics theory, such as the *ARRL Radio Amateur's Handbook*. The rules are listed on the FCC website, as well as in study books, and cover where one can transmit, how much radio power and the modes of operation. Usually in many radio clubs there are members who share such knowledge to newcomers, as well as provide classes to prepare for the exam.

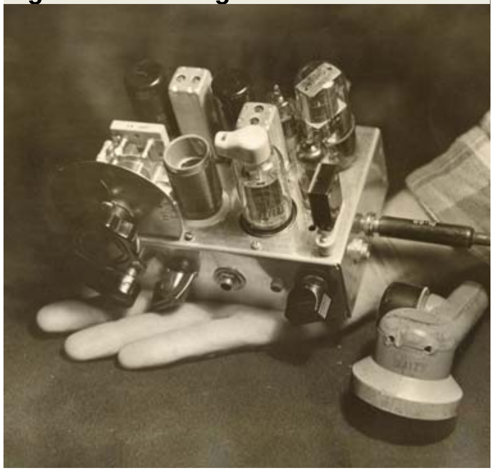
Hobbyists and clubs are often helpful to newcomers, mentoring them on the culture, exam preparation (called “Elmering” in the hobby) and explaining the technical theory and jargon of the hobby. My Elmer was Bob Dunn, who assisted in explaining the rules and rituals of the hobby to a young and eager student. However, previously to meeting Bob and while I was in the 6th grade in school, I found a pile of *QST* amateur radio magazines that a neighbor was throwing away. I spent weekend and school recess time reading the issues and fantasizing about my future radio station and whom I could talk to. I guess those old magazine issues were my original Elmer where learned a bit about the hobby. Upon meeting Bob, I visited his apartment radio room where he had a large old tube receiver playing the magic signals that came in clearer than my small and inexpensive receiver at home. He also had radio parts and weird electronic boxes lying around the cramped and messy room. I was excited Bob was an actual radio amateur; and I was envious of his insider status. He knew what he was talking about and had actually spoken with people from around the world in his bedroom! When I finally became a ham, Bob loaned me a radio to get started until I could save the money to buy a used transmitter at a local ham radio flea market. Since these modest beginnings, I have also occasionally helped newcomers with the discovery and learning of the hobby as well as setting up their radio station. It is rewarding to see the joy in someone’s eye when they get their radio station working.

In the early days, the radio electronics designs were simpler, but the field was still filled with technical jargon used in the group. George Mouridian described how he got his start building transmitters while as a boy:

> I even had a small rig in Hopkinton when I was in my teens of course, in the ‘20’s in fact, a 112A which is in between an 01A and a 171, on a little board-Hartley oscillator. A very simple transmitter with a tuned plate coil, tapped for the B+ and a 10k resistor from grid to ground with a capacitor. I later had push-pull transmitters and others (Interview with George Mouridian, winter 2004).

As there were no commercial manufacturers of radio equipment in the early days, most hams built their own simple equipment. Over time, the quality of electronics components became better and the larger radio tubes increased the power output of homemade transmitters. Even though commercial equipment started to become popular, throughout his life George would experiment with circuits and build miniature radios. His experimenting even improved the product of one manufacturer and provided a life-long serious avocation for him at the expense of time with his family (Brown 2006: 8).

Figure 14 a George Creation



Many members of the subculture enjoy electronics theory and practice, while other hams learn only the basics to pass the FCC exam. In the early days of ham radio, most hams were electronics hobbyists and had a deep knowledge of the electronic art as they built their equipment. In World War II there were about 25,000 hams in the military, most of them serving the Signal Corps. These men brought their hobby experience to the war effort where their expertise in shortwave radio communication was efficiently used. George Mouridian entered the service and used his radio and electronics training in the pacific. Many non-hams enlisted in the military and were trained to be

Morse code communicators, radio operators as well as technicians. Many of these veterans later became amateur radio operators after they returned home and thus fueled substantial growth of the hobby in the 1950s (Bartlett, 2007: 211, 212, 220). Some amateur radio operators purchased war surplus equipment that flooded the radio market at the end of the war. This gear could be inexpensively converted for amateur use. In the late 1970s while tuning my radio one day I discovered an older local ham Mick Deben, whose entire station was assembled from World War II surplus radio equipment. We became good radio friends. Some hams today achieve high rates of technical proficiency and are often highly regarded due to their technical prowess, however they tend to be in the minority as complete radio systems can be economically purchased.

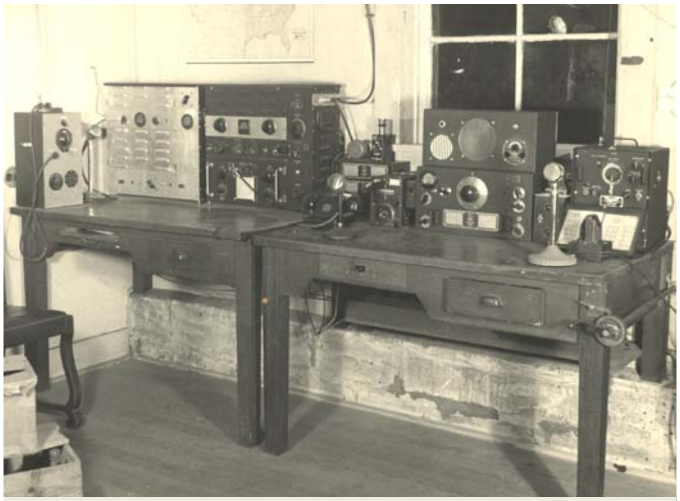


Figure 8 Mick's War Surplus Station in 1949

Today amateur radio equipment covers a wide gamut of capability, complexity and price. From the $10.00 mini-kit and simple wire antenna to the $10,000 top of the line transceiver, radio towers and antenna “farms”. Many hams fall in love with a radio “rig” and swear that their Icom 756 Pro 3 is better than a Yaesu FT1000MP. Japanese manufacturers dominate the market. With a list price of $8,684.00, a top radio today is the Icom IC-7700.

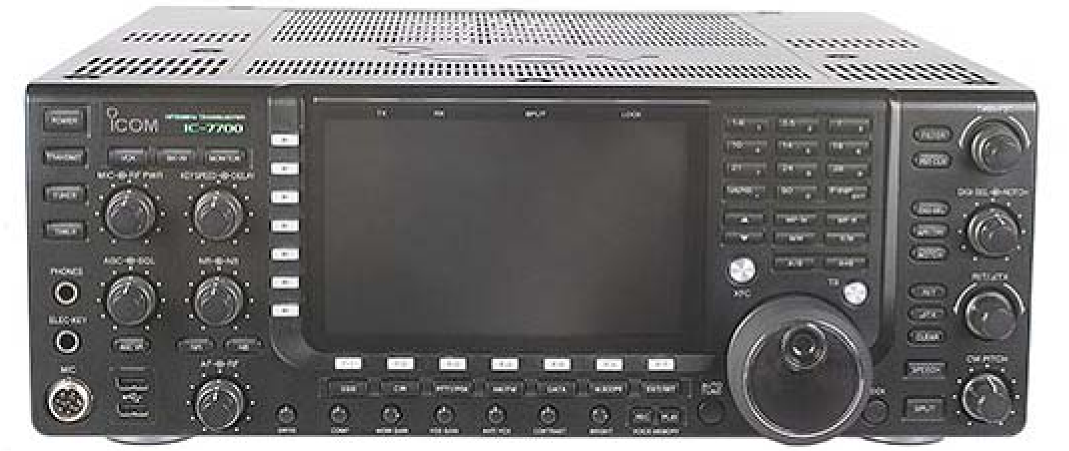


Figure 16 Icom IC-7700 Top-of-the-Line Transciver

Few hobbyists can afford such a radio and many spend around $1,200.00 for a home radio. Other amateurs use small radios that are installed in their car or a handheld walkie-talkie. Increasingly the computer and Internet are being incorporated in a radio station's operation these days.

After years of raising a family, Roger Gregorio has enjoyed finally obtaining the radios he could not afford while he was young. When he obtains a new vintage radio, Roger enjoys spending days repairing, cleaning, and tuning up the radio for peak performance. Jerry Reine spends time operating his Hallicrafters equipment and enjoys looking for parts and accessories for his gear. Mick Deben did not see much value in newer gear and valued the thrift of surplus equipment.

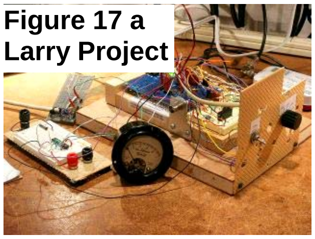


Figure 17 a Larry Project

Some electronically competent hams build (or "homebrew") radio equipment. Being a retired electrical engineer, Larry Coyle designs circuits using microprocessors for fun these days. He has designed accessories that hams use in their station and maintains a hobby website with his award winning designs.

Others buy radio kits and enjoy soldering the components together that make a complete set.

Where one sets up their radio and associated equipment is commonly called a radio “shack”. For the young hobbyist the radio gear is most often placed on a bedroom table. For a family household, this is often located in the basement. The lure of a “shack” is that it is separate from family activity and daily work troubles and one can “tune out and tune in” to a world of radio signals, experimenting and talking to other hobbyists with similar interests.

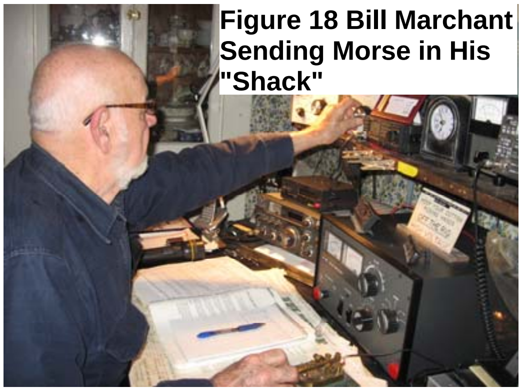


Figure 18 Bill Marchant Sending Morse in His "Shack"

While amateur radio is primarily a solitary venture, radio clubs allow for camaraderie and comparison of technical notes. Clubs started very early in the hobby and continue to this day. The frequent gathering of local hams with similar interests allows them to have person-to-person conversations (called an “eyeball QSO”) and to support each other in their efforts, particularly with radio and antenna difficulties. Clubs are also an avenue for public service. Recently a long-time member of our club passed away. Members of the club came together to support him, his wife and family through his sickness and his passing. Through our common enjoyment of the hobby, our club provides an extended support group for the

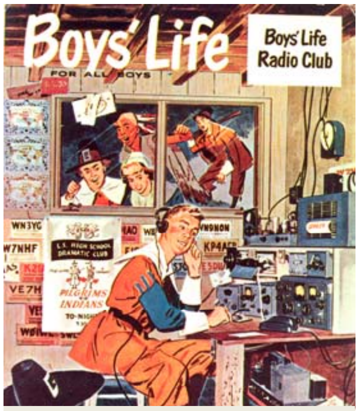


Figure 19 Boy's Life Magazine Radio Club

members of the club. According to FCC data, there are 10,510 amateur radio clubs in America, 810 clubs in New England and 35 clubs in Massachusetts (Speroni, 2010).

The buying and selling of radio equipment occurs not only at a store, but also at regional and local ham specific flea markets called ham fests. At a typical ham fest, there are tables that people rent in order to sell their personal gear as well as commercial vendors from the region. Also there is usually a club table where donated equipment is sold and the proceeds are used for the maintenance of the club. Sometimes there are forums where regional specialists in the hobby talk about their latest exploits. Often local boy-scout troops or church groups sell donuts, hot dogs and soda. Throughout the venue people are seen viewing the items for sale on the tables or talking about their recent purchases or hobby activities with friends. The noted frugality of some hams has fed the popularity of the events. Jerry Reine initially went to flea markets for the equipment, but now goes to catch up with friends and is now starting to combine his camping with ham radio. Jerry feels there is not much new blood coming into the hobby and thinks the hobby is in trouble (Interview with Jerry Reine, Marlboro Flea, 02/2010).

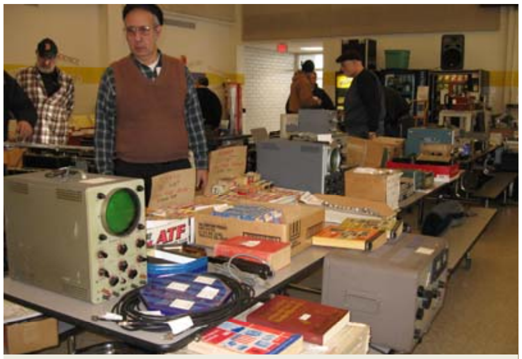
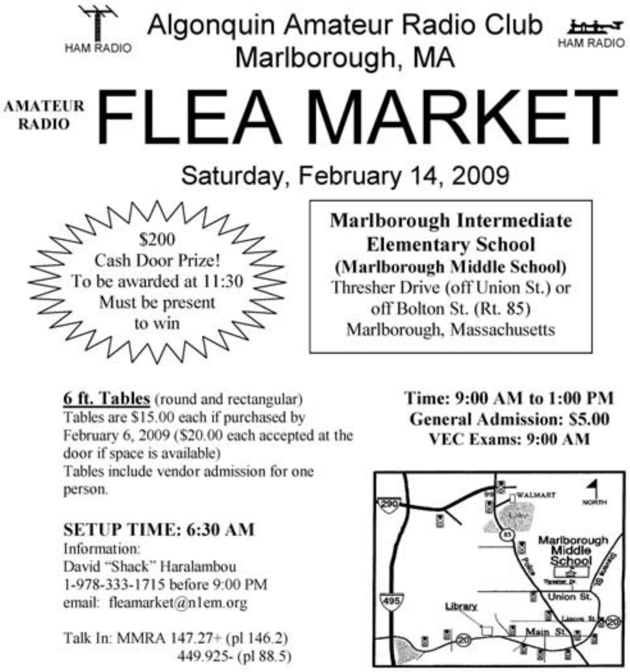


Figure 20 A Seller at a Hamfest



HAM RADIO

Algonquin Amateur Radio Club
Marlborough, MA

HAM RADIO

AMATEUR
RADIO

FLEA MARKET

Saturday, February 14, 2009

$200
Cash Door Prize!
To be awarded at 11:30
Must be present
to win

Marlborough Intermediate
Elementary School
(Marlborough Middle School)
Thresher Drive (off Union St.) or
off Bolton St. (Rt. 85)
Marlborough, Massachusetts

6 ft. Tables (round and rectangular)
Tables are $15.00 each if purchased by February 6, 2009 ($20.00 each accepted at the door if space is available)
Tables include vendor admission for one person.

SETUP TIME: 6:30 AM
Information:
David "Shack" Haralambou
1-978-333-1715 before 9:00 PM
email: fleamarket@n1em.org

Talk In: MMRA 147.27+ (pl 146.2)
449.925- (pl 88.5)

Time: 9:00 AM to 1:00 PM
General Admission: $5.00
VEC Exams: 9:00 AM

Figure 21 A Marlboro Flea Market Flyer

At the Marlboro flea Tim Ikeda, president of the Algonquin Amateur Radio Club told me that his club has held their flea market for over 25 years as an event to bring club members together, as a fundraising event, and for publicity. The proceeds fund their Field Day event and support town events such as school watches, Halloween and senior graduation safety programs. Tim sees retirees returning to the hobby and has recently experienced higher rates of young people becoming interested in the hobby. Tim also sees a pattern of younger people coming into the hobby when they are in school, but after college they settle down and raise a family, and after their children are grown they then have time to return to their hobby (personal interview at Marlboro flea, February 13, 2010).

Bob McTeague attends most ham fests in the northeast, but is not a ham. Bob is a commercial seller of vintage radio tubes, books and radios as a vocation. Having attended thousands of ham fests, Bob feels that the World War II generation had the ability to socialize and stick to long-term goals of collecting and building better than the younger people today. As the older generation is dying off and fewer radio estates are coming his way, Bob forecasts a reduction in the number of ham fests and is selling out to prepare for a career change (Phone interview 04/13/2010, not recorded).

The Mecca for amateur radio in the world is the Dayton Hamvention, when at its peak had over 30,000 attendees, 3000 flea market tables and most of the commercial exhibitors in the US and abroad attending. Through Bob Dunn, I was initiated into the Dayton Hamvention scene in 1982 where I rode with him and friends in a caravan of cars

Figure 22 Areal View of the Hamvention

from New Orleans to Ohio as we talked to each other and laughed on the radio during the trip. Once at the three-day event held every April at the Hara arena outside Dayton, I was amazed at the mind-boggling size of the event. Think of all those radio geeks in one place! At the convention are the representatives of the major magazines, regional clubs, multiple banquet rooms filled with hourly speakers on all major facets of the hobby, hourly prize drawings and of course the major equipment manufacturers displaying their latest models. Many in the subculture drive across multiple American states to the convention in a camper and spend the weekend in the parking lot of the arena. One year we went to the Saturday evening banquet where the Smothers Brothers entertained us. We now have a reunion at the event every few years.

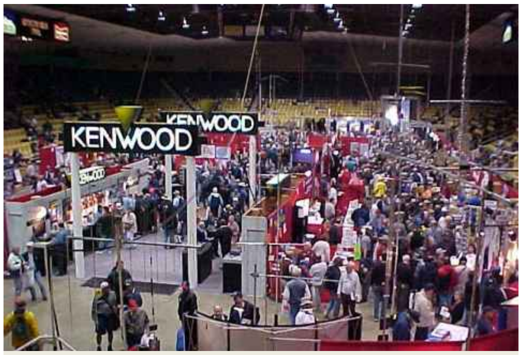


Figure 23 Commercial Vendors

If a hobbyist's radio or antenna breaks, often a ham will repair the antenna or radio for free. The simplest antennas are made of long lengths of wire and coaxial cable. Extensive antennas look like huge TV antennas on steroids and are placed on tall towers. The installation of an antenna can prove to be a particularly difficult task where one person often cannot complete the installation. Here groups of amateurs often from a club will often help build or erect a new antenna. This is called an "antenna party" in the subculture. At an antenna party, the owner of the antenna to be raised invites members of the fraternity to

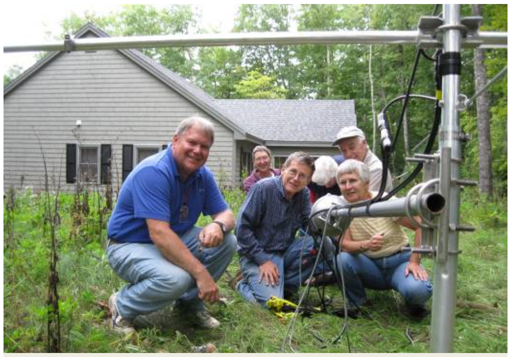
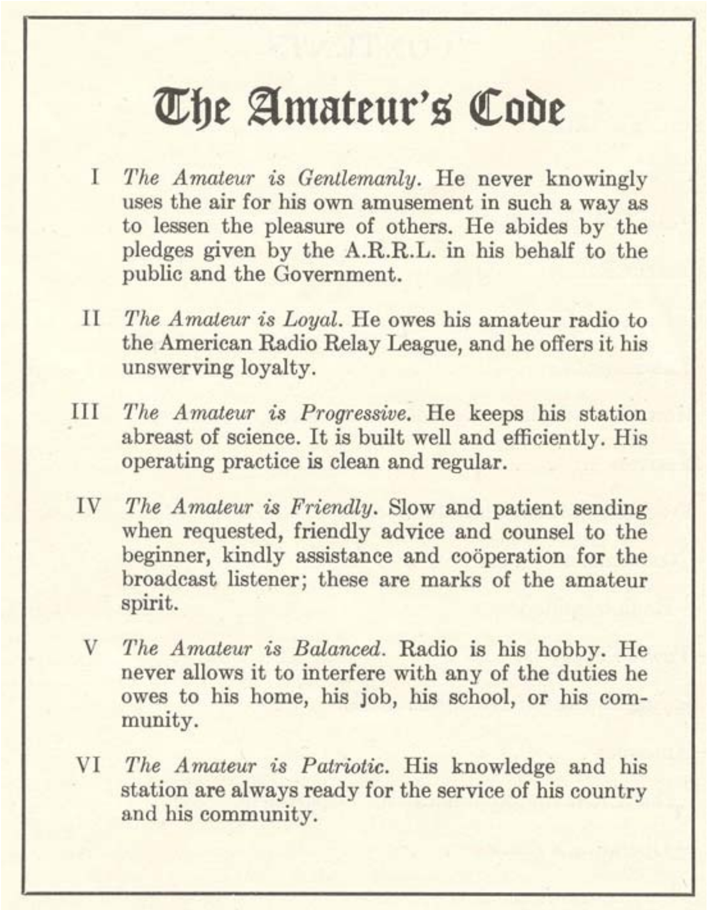


Figure 24 an Antenna Party for WF1V

assist. In exchange, he buys lunch and this is often reciprocated. Radio clubs are a good source of manpower for this work. Here is a link to an antenna party.

Norms

Radio amateurs are taught about proper operating rules and behavior during radio classes and FCC exam preparation. In the early days of the hobby, the American Radio Relay League provided an initial attempt at social guidelines. As seen in the 1932 *Radio Amateur's Handbook*, the Amateur's Code was placed in the front to guide the new ham towards more appropriate social action. This code gave the basics of hobby etiquette such as considerate operation of a radio transmitter, loyalty, friendliness, and even patriotism. Today there is less knowledge of this code. The ARRL today has publications that introduce newcomers on how to set up their "shack" or radio station as well as how to interact properly with other hobbyists. The main book that substitutes for an Elmer today is the *ARRL Operating Manual*.



The Amateur's Code

I *The Amateur is Gentlemanly.* He never knowingly uses the air for his own amusement in such a way as to lessen the pleasure of others. He abides by the pledges given by the A.R.R.L. in his behalf to the public and the Government.

II *The Amateur is Loyal.* He owes his amateur radio to the American Radio Relay League, and he offers it his unswerving loyalty.

III *The Amateur is Progressive.* He keeps his station abreast of science. It is built well and efficiently. His operating practice is clean and regular.

IV *The Amateur is Friendly.* Slow and patient sending when requested, friendly advice and counsel to the beginner, kindly assistance and coöperation for the broadcast listener; these are marks of the amateur spirit.

V *The Amateur is Balanced.* Radio is his hobby. He never allows it to interfere with any of the duties he owes to his home, his job, his school, or his community.

VI *The Amateur is Patriotic.* His knowledge and his station are always ready for the service of his country and his community.

Figure 25 the Amateur's Code of Ethics

Hams have a unique on air rules. For example, a procedure of asking on the air for a new conversation is done by “calling CQ” followed by the station’s call sign. Once someone answers with his or her call sign, the initiating station will acknowledge them and start a conversation. Discussions of religion and politics are not encouraged. Some sections of the ham radio spectrum are unofficially reserved for certain modes of operation. People talking on the radio and making informal turf rules are called “gentleman’s agreements”. For instance, the frequency where the AM mode of voice communications is used has been informally set as the “AM Window”. Most people using other modes know via word of mouth to avoid this radio area if they are not operating AM.

A few hams decide to not get their license and just use a fake call sign to talk on the radio. This person is labeled a “bootleg” operator. When they are discovered, they are ostracized publicly, and often the FCC is notified. Some people may be unhappy with certain FCC rules or guidelines. They can lobby the FCC to change a rule. Finally, a ham that operates in a poor manner on the radio in general is labeled a “lid”.

The ham community prides itself in correcting the actions of fellow hams that stray from acceptable on-air behavior. When someone operates outside of his frequency range, an “Official Observer” (a volunteer who is tuning his radio looking for illegal operation) may find those who stray and mail an unofficial notice to the person who strayed as an alert of the infraction. If a ham gets into an argument that becomes too heated, or says something particularly bad while drunk on the air, he may receive an email or phone call from a friend. When a ham’s transmitter has technical problems and is causing interference to other hams, these people will complain to that person and shun him. This encourages the person to correct his actions. If a ham interferes with a neighbor's television or stereo, that ham will usually affect repairs to the neighbor's gear at his own expense. Good operation is encouraged by the ARRL's *A1 Operator Club* award. Here two hams must recommend a third to be a member and vouch for excellent operator skills. In March of 1995 there were only 5,000 A1 operators worldwide (http://www.arrl.org/awards/a1-op/).

Members of the subculture often must deal with certain types of radio interference. Radio interference can take the form of natural noise (i.e. static from nearby lightning storms), noise from appliances such as TV's, computers and light dimmers, or man-made interference. If one does not use a radio transmitter carefully, they can interfere with another conversation. Sometimes this interference is malicious where some hobbyists get their anger out by intentionally interfering with other hams on the radio. I have heard many arguments arise when one ham intentionally interferes with another ham. Roger Gregorio does not get on the radio much these days because of such interference and now spends time on his computer with a small group of fellow hams on Skype, a social networking "Voice Over Internet Protocol" communications system. Here radio interference is avoided and an expensive radio and large antenna is not needed. He avoids radio signal fading, congestion and intentional interference. According to Roger, Skype allows for easier communication than ham radio (phone interview, February 21, 2010).

Rituals

What does one do in the subculture? There are many activities that can be performed solo or in groups. The radio hobby includes the activity of radio contesting. Held on certain weekends of the year and using different rules and goals, a radio operator would spend many hours talking on his radio to as many people as possible based on the rules of the contest, hopefully being the one with the most conversations. At the end of the event, a participant would send a list of their results to a contest managing agency-usually a magazine-for judging. The winner gets listed in the magazine, or even receives an award plaque and thus has some form of notoriety or bragging rights. Usually the top few contesters have elaborate multiple radio set-ups costing tens of thousands of dollars that include large antenna systems. Some clubs such as the Yankee Clipper Contest Club were formed to promote contesting.

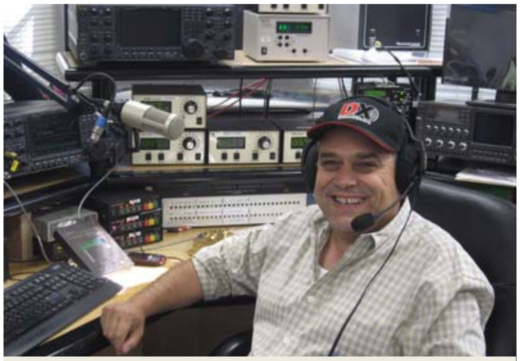


Figure 26 Contest Station in Natick, MA

Radio networks (called “nets”) are a group of hams gathered at a scheduled time on one frequency with a particular operating goal. This may be to send telegram style messages along from an originating person to the recipient (called “passing traffic”) or run a swap net, where people announce what they wish to sell or buy. In high school I improved my Morse code speed by joining a regional traffic net and passing messages on the radio after dinner (a good way to avoid homework). Nets are held using voice or Morse code and are an excellent way to keep in practice for an emergency.

A number of hams enjoy operating radios away from home. This is often called a "DXpedition" (an expedition to a remote location). Last year a member of our radio club played in a video of a group of American guys who decided to operate a radio station on a reef that was little more than a few rocks sticking out of the South China Sea. Hundreds of hams around the world tuned in the radio operation at Scarborough reef and talked to the remote operators. A less adventurous time is sometimes had by operating radios when in a lighthouse. Here hams try to talk to as many people in lighthouses as possible. The club I was a member of in New Orleans had an expedition to an island in the Gulf of Mexico in the 1980s. A prize from these operations is a verification card and bragging rights one reached such a remote location.

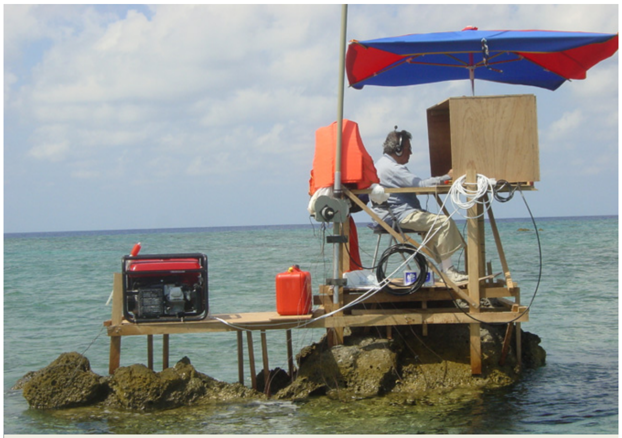


Figure 27 Rock Radio on a Remote Reef!

Artifacts

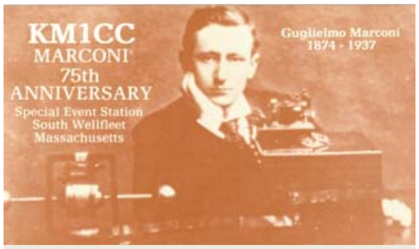


Figure 28 A Special Event QSL

Other than radio equipment and antennas, the subculture has some interesting artifacts. The verification "QSL card" is a prominent item in most ham shacks. The QSL is a post card with a ham's call sign, name, address, and information about a radio conversation. After a radio conversation, the participants can optionally mail a QSL card to the other operator as proof of the conversation. This is treated as a “final courtesy” of a radio conversation and can also be used as proof of meeting a contest’s requirements. For instance, if someone talks with a ham in each of the 50 United States, they can mail the collection of cards from each of their 50 conversations to the ARRL. If accepted, the entrant is rewarded with a Worked All States award. Many people collect QSL cards.

Roger Gregorio has received many QSL cards during his hobby career and replied to all of them the same day. Roger shares the idea that a card is the final topping on the cake for a conversation. Many cards are very attractive to view. Roger laments the fact that the only cards he gets today come from Morse code operators. When he lived in Vermont, Roger would often receive QSL cards from people seeking to get Worked All States award, as Vermont is a difficult state to talk to and confirm with a QSL because the ham population is low. (Phone interview, February 21, 2010).

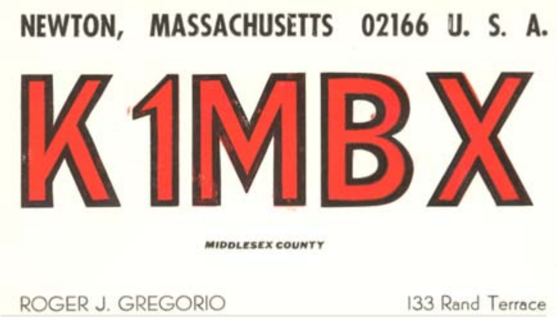

NEWTON, MASSACHUSETTS 02166 U. S. A.
K1MBX
MIDDLESEX COUNTY
ROGER J. GREGORIO
133 Rand Terrace

Figure 29 Roger's QSL Card

The *American Electrician* magazine was the earliest periodical that published the first do-it-yourself article for radio amateurs on radio in 1896 (Gregory and Sahre, 2003: 33). Today most hams subscribe to at least one radio magazine. The two most popular ones today are *QST* and *CQ Amateur Radio* magazine. These periodicals discuss the major interests within the hobby and contain technical articles. There are a few micro-magazines such as *Electric Radio* that deal with a sub-set of the hobby (i.e. the restoration and use of vintage radio equipment). Today, hobby information is becoming most easily available via the Internet.

Analysis

According to the Online Dictionary of the Social Sciences a subculture is “A culture-within-a-culture; the somewhat distinct norms, values and behavior of particular groups located within society" (http://sociologyindex.com/subculture.htm). Within this definition, Amateur Radio is an insular subculture where people interact within the hobby for recreational purposes, find friends and further their technical knowledge. The hobbyists generally do not interact with non-fraternity members during their recreational efforts. The radio avocation keeps people occupied during their leisure time where members achieve personal and enjoyable pursuits and goals. While other people love to fish, go bowling, ride motorcycles, the radio hobbyists are generally scientifically motivated. Many times a person enters the hobby, as he/she is not popular in school or has common social groups. However they can find excitement in technical achievement with the limited social connection that amateur radio can provide. The hobby’s use of technology to create a virtual meeting place is similar to the use of online social media such as Twitter or Facebook as the user can communicate with others, but hide their full identity behind their equipment if desired. This subculture tends to have members who perform solitary tasks, but come out of their “shacks” to visit and compare notes with other members (Haring, 2006: 139).

The amateur radio operators have enjoyed social networking for decades when the general public has usually been excluded as a whole. The amateur radio subculture uses the medium of radio to enable communications among its members. The group attracts people who are interested in electronics, talking via radio and providing public service communication. Hams may use the modes of voice, Morse code, or novel digital methods over radio to communicate with other hams either in their town, across the U.S. or around the world. There are enthusiasts who have hobby based goals such as of talking to as many foreign countries as possible (called “DXing”), participating in radio contests, the use and restoration of vintage equipment, or using the lowest amount of radio power (called “QRP”) to talk with someone. Finally amateur radio is also known to provide public service. Providing needed communications during disasters such as hurricane Katrina or the recent northeast flooding helps provides goodwill to the public and helps validate not only the participant and their license, but also the hobby as a whole.

Cooperation and sharing of technical information is rated highly in the group. A few people who enter the hobby use this technical knowledge as the foundation of their vocation. In some circles, this hobby can be called a “serious leisure” as many amateur radio operators are avid in “the systematic pursuit of an amateur, hobbyist, or volunteer activity“(Stebbins, 2006: 164). Most amateur radio operators have invested substantial time, money, and effort in their hobby. Many are long-term hobbyists.

The development of skills and knowledge, recreation, personal enrichment, the satisfaction of public service, associating with like-minded individuals and group accomplishment can provide people in the hobby with substantial personal growth. However the most devoted participants tend to be marginally involved with society as a whole as they do not efficiently interface with family and friends due to their obsession of the hobby. This avoidance of family life has caused many hams to have strained relationships within their family.

Other than using the telephone, ham radio was a primary means of instant person-to-person social communication before the advent of the home computer and the Internet. In the 1950s and 1960s most Americans knew an amateur radio operator in their neighborhood. These experimenters would often learn about a disaster or world event before the newspapers of television would have the story. With my radio I would often learn about events a day or two before it was reported on TV. While amateur radio was an important medium in the recent past, today many younger people do not know the hobby exists.

And, not all people are happy with radio today. Since Roger Gregorio has moved to North Carolina, he experiences ham radio differently than when he was younger. The friends he grew up with in Newton are no longer around and creating new ham relationships is more difficult. According to Roger, small groups or cliques of hams seem to stand out more in the south than in New England. The small groups pop up on the air and do not often invite strangers to join in. Also, in his earlier days, he heard people calling “CQ” as an opening to initiate a conversation with other hams; today he rarely hears this. However Roger states that Morse code operators still operate the traditional way by calling “CQ”. Finally Roger does not like radio nets and is turned off by those who feel they own a frequency.

The Future

Amateur radio was an established subculture by 1950. After this time, the hobby evolved, but did not change substantially in structure (Bartlett 2007: 231). Many members are concerned about the future of the traditional form of the hobby because of the aging population of its members. Others are optimistic as population figures show growing rates of amateur radio licensees. Today, communications technology and social media is changing at a faster pace than ever before; and ham radio adopts these new modes of communications. Inventive radio people have been incorporating the computer as well as Internet communications with their radio activity, but computer technology and social systems may eventually supplant the technical limitations and workflow of the hobby. Will there be a sharp decline in the ham population in coming years as the elderly ham population dies off, or will there be a rebirth? Will personal social communications such as Skype and Facebook kill ham radio? Where are the young hams?

With the proliferation of Internet and computing technology, worldwide personal communication is now easily available to anyone. There is no longer the social stratification in communications as existed in the past. In an editorial piece in the April 2010 issue of *CQ magazine*, Editor Rich Moseson discovered that many of the new hams today are communicating not on the radio, but on Facebook. In the editorial Rich explained that magazine column author Thomas Hood recently created a CQ magazine Facebook group page and that the group had reached a membership of 1,500 "fans" by the time of his editorial. In the editorial, Rich wrote: "…a disproportionate number (compared with our typical readers and our general perception of today's hams) are young and/or female." Rich feels that the new hams are not being reached in the traditional ways such as via clubs and magazines (Moseson 2010: 8). This led me to join the group and pose the question: "Why do you use Facebook instead of talking on the radio?" (Brown, 2010). I received the following key ideas beginning with the creator of the group Thomas Hood:

> There will be moments, by the way, when HF radio is so degraded that communications with anyone farther than the neighborhood is a challenge. During those times, social networking aids in knowing the trend of "live" conditions, and, exploring the "raw data" of current conditions. Unlike older, slower methods of collaborating data, social networking with the nearly "live" access to "right-now" information allows us to analyze and utilize the real-time information and perhaps even to learn new things.

Rich added:

> As computers and related devices (iPods, etc.) become more and more oriented to non-technical users, with cases that are glued shut and labels that say "no user-serviceable parts inside," ham radio will continue to be the last bastion for the terminally curious, those who want to dig inside their technology to learn how it really works, and to figure out how to make it do other things than what the original designer(s) intended.

On the Facebook thread, Danny Loyd continued:

> It is great to have somewhere we can come and talk about the hobby of Amateur Radio in open way. Too often the older members of this hobby do not want to embrace the new ways of communications.

Dana Philips elaborated:

> There is a challenge in ham radio that is absent in social networking. There are personal goals, which can be achieved in ham radio, which require technical learning and growth of skills. That is why QRP, home brewing and contesting are such large aspects of the ham community. Yes, ham radio allows you to keep in touch with friends and fellow hobbyists, as do social networking sites, that aspect of ham radio grows out of the achievement of a certain level in technical proficiency and often is directly related to those proficiencies.

There were many other interesting postings illustrating that hams are adopting new social media and creating new ways to make the most of amateur radio with it. In fact, a main amateur radio website now boasts that it is now the largest organization serving the hobby. *QRZ.com* has 385,586 members on its online forum web site (Lloyd, 2010). Finally, my hobby habits have changed as well over the decades. Instead of finding nuggets of technical information over the radio or in magazines, I now find much technical information online though web sites such as *AM Fone*. On the website people talk about vintage radio, the AM mode as well as ask technical questions and find solutions.

National Public Radio's *All Things Considered* show explained that amateur radio is growing and adapting

> With smart phones and other devices, people are more plugged in to the Internet than before. But people are still discovering the joy of communicating with a technology that's existed for nearly a century (Sepic, 2010).

Today's social media has roots in amateur radio as ham radio began as a social communications hobby. The idea of a ham talking to other amateurs over the radio is no different from someone emailing, texting, or talking on Skype today. Email is similar to amateur radio digital modes of packet, PSK-31 and radio-teletype, where an operator types on a keyboard and the resulting text shows up at the other station's computer monitor. Instead of the Internet, the medium is radio.

Modern cell phone texting uses similar techniques of shorthand as amateur radio to communicate with another person. As demonstrated by a Tonight Show contest, hams using Morse code were actually faster than a person texting on a cell phone. Before the cellular telephone became commonplace, hams would use a radio in their car where often they would talk to their wife at home though a radio repeater (a radio tower that repeats the signal) that had a telephone connection. While driving their car, mobile hams could call home to tell the spouse they would be late for dinner.

Ham radio was the first wireless communications network. In fact, during the early days radio was commonly called “wireless”, as compared to today’s use that depicts wireless computer connections. The web-based communications of the Internet has its roots in an idea by Hiram Maxim of a relay network, similar to the current Internet Protocol (IP) packet routing as used in computer networks and the Internet. To come full circle, nowadays hams use “IRLP” or Internet Radio Linking Project that allows multiple radios or repeaters to be chained together using an Internet voice link, such as Skype.

Summary

After studying how members of the amateur radio subculture learn, enter the fraternity, operate and interact, I see that amateur radio is a rich and dynamic subculture centered on the enjoyment of radio and bases its unique social community on the use of radio and related technology. The pursuit of this serious avocation enables technology enthusiasts to grow and interact personally and sometimes professionally, generally improving their identity and increasing the well being of its members. Amateur radio provides a key path for the socialization and the technical proficiency of its members, both publicly as a group and privately in their “ham shacks”. This subculture provides a sense of belonging and participation to its members.

Personally, this long standing-yet dynamic-hobby has provided me with many years of social and technical growth, and has led to a successful technical vocation. Ham radio helps me stay connected with other people and provides for a good personal support system. Today, we are witnessing a rebirth of amateur radio as new social media develops and melds with traditional forms of communication. Here, I see a synergy forming between amateur radio and new communications methods and an interesting future for the subculture.

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